CREDIT INFORMATION SHARING AND PROFITABILITY OF COMMERCIAL BANKS IN NAKURU COUNTY, KENYA

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Abstract: The study focused on analyzing credit information sharing effect on Commercial banks' profitability in Nakuru County, Kenya. The research's objectives revolved around establishing the effects of borrowers credit history information sharing, collateral information sharing, customer identification information sharing and profitability of Commercial banks in Nakuru County. The research was supported by adverse selection, the theory of delegated monitoring and moral hazard theory. The study useda descriptive research design, while census approach was used in this study. The unit of observation was the 32 commercial banks in Nakuru County while the unit of analysiswas the 32 heads of credit departments among the banks. The study used both structured and unstructured questionnaires with closed and open-ended questions to gather relevant data. The study used both descriptive and multiple regression analysis. The research conclusion that credit information sharing positively and significantly affect profitability of commercial banks in Nakuru County. Also, borrower's credit history information, credit information sharing cost, customer identification information and collateral information sharing had a significant extent influenced commercial banks' profitability in Nakuru County. The credit information sharing enhanced banks' ability to get data on loan security, guarantors and other forms of collateral to reduce credit default. It was concluded that CIS enabled banks to identify, regulate and avoid clients with poor credit history. The research recommendation is that banking institutions need to have their own client credit history records to supplement those by the CRBs. The banks need all to be enrolled with all the registered CRBs in Kenya to enable access sufficient client information before extending credit. The research further puts the recommendation that the banks need to invest and put more focus on customer database for easy identification of customers, their collateral and credit history.

Keywords: Borrowers' Credit History Information, Credit Information Sharing Cost, Customer Identification Information and Collateral Information Sharing, Profitability, Commercial Banks.

1. INTRODUCTION

1.1 Background of the Study

Commercial banks play key roles in the growth and development of economies globally. In a study by Vong and Fellow Scholars (2009) posits that "the main revenue source is from interest income, these amounts to 80% of earnings from banks." The other revenue sources of bank are from securities market are dividends and gains. Vong *et al*. (2009) indicated that other small sources of income like service charge on deposit accounts and earnings from trust activities. Commercial banks main role is lending which serves as a major income source for them. In the banking sector, loans have the highest returns on banks' balance sheet. Therefore, the more loans a bank offers, the more revenue they generate translating to more profits. Abreu and Mendes (2000), state that banks must be cautious in lending loans since if they lend more to borrowers, they create exposure on their end regarding default and liquidity risks which have adverse impact on profitability and long term business.

Credit risk models are applied by financial institutions such banks so as to determine losses from credit loss for a specific time scope. The approach's output is portfolio loss distributionthat explains the probable losses from credit as well as their possibilities. In estimating the credit loss organization must create the value of portfolio today as well as the end period of the time scope. There usually exist two key models associated with determining the credit loss. Within the default mode paradigm, a credit loss takes place once there is a default. Loses from credit are considered costless though the existing difference between the recovery value and exposure at defaults. Under the view of the market paradigm, losses from credit are said to have occurred in case of default by borrowers. It also takes place in case of decline of the credit quality of borrowers (Braverman & Guasch, 2006). As much as there is the paradigm, it is still a tall order for banks to attain prompt payment history for various clients for use within the credit assessment process.

It is pertinent for commercial banks to get in right when determining which one of its customers is creditworthy. This is particularly so since giving loans to potential defaulters could cost a bank dearly. As a result, banks use credit referencing solutions to obtain information on the credit record of borrowers. Credit referencing refers to "the manner in which customer's individual details and records of the credit are tracked, monitored and scored" (Brown, Jappelli & Pagano, 2006).

Credit referencing enhances "sharing of credit financial data on borrowers including but not limited to individuals, sole proprietors, companies and Government entities among others" (Brown et al., 2006). The companies that undertake credit referencing, usually at a fee, are termed as credit reference bureaus (CRBs). Usually, CRBs gather information the banking institutions, other financial institutions as well as the registries of companies on the credit history from and shares it with financial institutions on request. The information so provided makes it easy for banks to determine who to give loans to and who to be careful about. Credit Reference Bureaus are giant storage facility for everyone's credit information, providing a centralized database of everyone's credit history and activities. It provides a platform on which lenders share credit information on the credit performance of their customers. The information that is on the database is sourced from regulated lenders like Commercial Banks, Microfinance Banks and other non-regulated credit providers (Turner & Varghese, 2010).

Credit information sharing enables lenders to address the issue of credit rationing. In extending a loan, lenders are faced with the information asymmetry, adverse selection and problem of moral hazard that only borrowers/customers are in a position to know precisely if he or she has the intention and capability to make loan repayments. Therefore, the lender must deduce the borrowers' profile risk. This assessment is very important in that the borrowed funds involve a consensus between the borrower and the lender to repay at a future date, something that has a high level of consequences for the lenders, (Beck, Lin, & Ma, 2011). It involves the lender in giving value now for a promise by the borrower to repay at a future date. Borrowers' credit history information, credit information sharing cost, customer identification information and collateral information sharing were used as proxies for credit information sharing.

1.2 Statement of the Problem

The financial services sector in Kenya has faced quite a number of challenges ranging from high level of non-performing loans, uncontrolled competition from other players, money laundering, regulatory requirements and penalties to use as conductedfor corruption. This has led to poor performance of the commercial banks with MFIs and SACCOs taking the lead (Muriuki, 2017).

The entire banking sector faces issues in achieving arrange of customer's information on payments history to help them identify potential borrowers. Since, 2008, financial instructions in the country have subscribed to different credit reference bureaus that offer data concerning the clients. The aim of the information sharing is to provide information that is accurate and up to date on all the potential borrower customers. Jappelli and Pagano (2006) conducted a survey in forty-three countries. The findings obtained concluded that "lending done by banks to the privately owned sectors are larger and the rate of default is lesser in those countries that information sharing is much highly extensive and very profound in a solid manner."

In Kenya, Ocharo (2013) found that NPL proportion has declined and the number of credit reports requested by banks had increased. Bonaya (2012) conducted a study on credit information sharing influence on loan performance in the context of Kenyan commercial banks. The study found out that the default rate of loans is negatively related to total loans. Kipyegon (2011) found that credit information sharing and bank performance are strongly related.

However, the research studies conducted on effects of credit information sharing on the profitability of commercial banks are few; yet and importantly credit information sharing provides lenders (commercial banks) with a better position to analyze the borrower's repayment capability translating to profitability through loan interest rates. Therefore, thisresearch aims at establishing the effect of credit information sharing on profitability of banks in Nakuru County Kenya.

1.3 Objectives of the Study

(i) To ascertain the effect of borrowers credit history information on the profitability of Commercial Banks in Nakuru County, Kenya.

(ii) To establish the effect of credit information sharing cost on the profitability of Commercial Banks in Nakuru County, Kenya.

(iii) To evaluate the effect of customer identification information on the profitability of Commercial Banks in Nakuru County, Kenya.

(iv) To establish the effect of collateral information sharing on the profitability of Commercial Banks in Nakuru County, Kenya.

1.4 Significance of the Study

The findings obtained from this study will benefit various stakeholders in the financial sector. Commercial banks shall be able to obtain information on how CIS influence cost reduction, easy information sharing, and reduction in delinquency and default and credit evaluation among other benefits.

Credit reference bureaus shall be able to put in place policies aimed at enhancing their capacity to provide accurate information to financial institutions. They shall enhance their perceived reliability by commercial banks hence increasing their individual profitability as more and more banks start seeking information from them. The findings of the study will be important to scholars since they shall obtain literature on the link between credits referencing and profitability in commercial banks. As such, they shall be able to carry out follow up studies on other variables which shall not be studied in this study and expand knowledge on this study field.

2. LITERATURE REVIEW

2.1 Literature Review

2.2 Theoretical Review

The research was supported by information asymmetry theory and theory of delegated monitoring. A study by Pagano and Jappelli (1993) indicates that "sharing of information leads to the reduction of adverse selection by improving banking sources of information in regards to the applicants of credit." The theory of asymmetric information states 'that it could be hard to differentiate between the good borrowers from the bad borrower' (Auronen, 2003) in Richard (2011). This may lead to problems of adverse selection and also moral hazards. Adverse selection theory gives an explanation in the business markets, whereby the parties are in possession of more information with regards to specific items to be transacted.

The Theory of Delegated Monitoring is very critical in the literature of banks' existence in the economy. In a broad definition, when a bank closely monitors a borrower, then the bank will have to collect information before and after the loan is disbursed to the borrower. It includes a thorough screening of all the loan applications, ensuring that the borrower is creditworthy and making sure the borrower understands and abides by the terms and conditions of the lender contract. In this process, banks usually have privileged information since they have the client's records and can see the transactions in the account. For the small enterprises and medium enterprises, this is crucial to the role of banks in the system of making payments (Matthews & Thompson, 2008).

2.3 Empirical Review

2.3.1 Borrowers' Credit History Information Sharing and Bank Profitability

McIntosh and Wydick (2009) found out that default rates decrease marginally after the introduction of credit reference bureaus. Jappelli and Pagano (2002), found that information sharing will cause reduction at loan risks by three to four percentage points over a base rate of 7.7 percent. Luoto, McIntosh, and Wydick (2007) found a big percentage of 3.3

decline in loans fraction with any payments made late. They also found out that the trend on default becomes notably negative when the use of bureaus is put in place. They concluded that the impact in the Guatemalan works of experiment indicates of marginal reduction in loans default rate, although the results are less than the expectations (Luoto *et al*., 2007).

Kipyegon (2011) did a study on credit information sharing and bank performance in Kenya. A case study of Kenya Commercial Bank was done whereby a sample population of 50 branches was used. A sample was for 69 employees in all the branches were randomly selected. The study would establish that full information concerning the borrowers' payment pattern helps the banks in estimating their chance of recovering the loans is 50 %, those who strongly agreed is 36.4%, those who were uncertain are 13.6%. This was 19, therefore, interpreted to mean that when bank hasinformation concerning the payment of a borrower, then they can use such past information to calculate on their chances of recovering such loans from them. The study also established that showed that when the banks get quality information about the borrowers' credit history, it helps the bank assess its risk princely and reduce the search costs.

Koros (2015) studied "the effect of CIS on the general credit market financial performance narrowing down on commercial banks." A census study of the 43 commercial banks' secondary data was collected between 2008 and 2014. The descriptive research design was employed and a regression analysis is done. A positive relationship was established between credit information sharing measured by the number of credit reports pulled and credit market financial performance.

2.3.2 Credit Information sharing Cost and Bank Profitability

Brown, Jappelli, and Pagano (2007) using "firm level panel data in transition economies," found that the cost of credit reduces as information sharing increases between lenders (McIntosh &Wydick, 2007). Kalberg and Udell (2003), also contributed to this, whichreport that history of credit in Dun & Bradstreet's documents improve prediction in default compared to only using financial statements. Cowan and De Gregorio (2003), findings were that in Chile both positive and negative information in credit reports contribute to predicting default in loans (Pagano & Jappelli, 2005).

Muthoni (2014) studied credit information sharing, bank characteristics, and general market financial performance. The study aimed at establishing sharing of credit information effect on the overall performance of the credit market. Data on default and credit availability of commercial banks were gathered for 5 years. Descriptive and exploratory research designs were applied to establish how sharing credit information affects on performance of the entire population of all banks in Kenya. Panel data regression was done. The researcher established that sharing of credit information significantly reduces the default rates and cost of credit and hence enhancing the profitability of banking institutions.

2.3.3 Customer Identification Information and Bank Profitability

Padilla and Pagano (1997) used a model with two periods where it was advantageous for banks which had acquired information private. The findings were that the private information is an advantage to banks and have market power about the borrowers. This will cause hold-up problems in the long run. When commercial banks share information concerning their borrowers, there will be an inability to get more details about them, leaving a bigger number of the excess to entrepreneurs. Ng'ang'a (2015) explored "the effects of CIS on non-performing loans of the banks in Kenya." Secondary data of 44 commercial banks were analyzed between 2010 and 2014. Multiple linear regressions was used to establish a negative relation demonstrating the fact that credit information sharing betters management of credit risk exposure.

Petersen (1994) posits that "banks face adverse selection or moral hazard challenge when operating outside the credit information mechanism." Inefficient allocation of credit which arises from the fact that specific characteristics information about the borrower is hiddenfrom the lender is called adverse selection. On the other hand, moral hazard results from inabilities to see the actions of the borrower which directly alters the probability of repayment. The opportunistic action was taken by a borrower to exploit the lender due to informational gap results to sub optimal allocation of resources in lending.

Hogen at al. (2001) asserts that "the reduction of non-performing loans is among the main role of the bank's management." This fact is supported by (Deborah &April, 2013; Eagles & Bosworth 1998). The researchers conclude that if the menace of non-performing loans is not controlled, these institutions will incur financial losses which will eat up their capital and interests drastically impairing the ability to sale loans as per the intended purpose of the bank. Assessment of credit risk is an essential component of macro-prudential surveillance (Beck et al., 2013). The above studies suggest that credit risk is essential in stress testing due to its impact on the bottom line of an institution's balance sheet.

2.3.4 Collateral Information Sharing and Profitability of Banks

Mutie (2006) did a study to evaluate credit scoring practices, and profitability in Kenyan commercial banks used a census study of registered commercial banks in Kenya as at 31/12/2004 by CBK. The above study used both primary and secondary data. Level of NPLs was extracted from a financial statement for five years, and asset quality ratio was used as an indicator for NPLs. The data was fitted into a regression model then analyzed using SPSS. The study found out that the majority of the commercial banks in Kenya have a default rate of 20% and most of the banks reorganized the default when the client has three late repayments. The study also found out that 61% of the banks indicated a moderate level of NPLs compared to 39% of the banks with low level of NPLs.

3. RESEARCH METHODOLOGY

3.1 Research Methodology

3.2 Research Design

Research design is "the framework of investigation that is conceived with the objective ot obtaining answers to specifc research questions." The structure reflects the entire scheme of the project (Robson, 2002). A descriptive research design wasused in this study. The key purpose of the research techniques is "to offer key data on the features of a specific study group" (Mugenda & Mugenda, 2003). The research techniqueis also used as "precursor to quantitative research designs since it provides the general overview giving some valuable pointers as to what variables are worth testing quantitatively."

3.3 Target Population

The study population refers to a group of events as well as individuals or objects with specific features (Mugenda & Mugenda, 2003). The target population for the research was the 32 commercial banks operating in Nakuru County (www.centralbank.go.ke). The census target respondents were the 32 heads of credit department in the banks.

3.4 Sample size

The study used a census approach to enable all commercial banks operating in Nakuru County be included since the number is attainable.

3.5 Data Collection Instrument

The study utilized the semi structured survey questionnaire which was given to the target respondents. The questions werestructuredboth open and closed ended and tested with few selected respondentsfor any possible improvements. This was to enhance the accuracy and efficiency of the instruments and the collected data of the study.

3.6 Data Analysis and Presentation

The data collected was both quantitative and qualitative. A descriptive analysis was adoptedthen edited for uniformity purposes. The study's quantitative datawasanalyzed by descriptive statisticssuch as deviations, means, frequencies, percentages, and means. The data was further analyzed using inferential statistics such as correlation and regression to establish the linkages between predictor and research dependent variables. A multiple regression analysis was used in testing the effect of credit information sharing on the profitability of Commercial Banks in Nakuru County, Kenya.

A pilot study was done among three (3) commercial banks in Baringo County to ascertain the research instrument reliability. A Cronbach alpha was applied on each variable in the research for purposes of ascertaining their reliability. Table 1 depicts the research outcome.

Table 1: Reliability Test

Variable	Number of Items	Cronbach Alpha
Borrower's credit history information	5	0.821
Credit information sharing cost	5	0.804
Customer identification information	5	0.834
Collateral information sharing	5	0.798
Average Cronbach Coefficient		0.8143

Source: Researcher, 2019

It was indicated that the Cronbach coefficient for borrower's credit history information as the first variable was 0.821, credit information sharing cost had a coefficient of 0.804, customer identification information had a coefficient of 0.834, and collateral information sharing had a coefficient of 0.798. 0.8143 was the average Cronbach coefficient and notably was higher than 0.7, thus implying there was adequate reliability of research instruments. In support of this is Cronbach (1951), Cronbach alpha higher than 0.7 means sufficient reliability.

4.   DATA ANALYSIS

4.1 Data Analysis

4.2 Response Rate

From the findings, it was established that of the 32 respondents, 30 respondents completed the questionnaires and returned them to the researcher.This reflectsaresponse rateof 93.7, percent demonstrating that the response wasappropriate to be used forthe analysis. This is also in justification to Mugenda and Mugenda's (2003) provision that "response rate 70 % or more is perceived as sufficient."

4.4 Regression Analysis

The findings of Model Summary, ANOVA and Regression Coefficients are indicated in subsequent sections below.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.879[a]	.868	.868	1.79234

Source: Researcher, 2019

The results in Table 2 shows that coefficient of correlation R was 0.879 an indication of strong positive correlation between the variables. Coefficient of adjusted determination R^2 was 0.868 which means that 86.8% of changes in the dependent variable profitabilitycan be explained by changes in independent variables which include borrower's credit history information sharing, credit information sharing cost, customer identification information sharing and collateral information sharing. 13.2% residual can be attributed to other factors not considered in this research.

Analysis of Variance (ANOVA)

ANOVA was done at 95% significance level. The aim of the research was establishing the relationship existing between F calculated and F critical. Table 3 below presents the findings.

Table 3: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	849.566	5	169.9132	17.2174	.000[b]
Residual	246.718	25	9.8687		
Total	1096.284	30			

Source: Researcher, 2019

The outcome reveal that F Calculated was 17.2174 and F Critical was 5.2173, thus indicating that F Calculated > F Critical (17.2174>5.2173) which is an evidence that the overall model was therefore significant. The p value 0.000<0.05 also indicated that at least one variable had a significant influence profitability of the commercial banks in Nakuru County, Kenya.

Coefficients of Regression

Regression coefficient was applied in establishing the influence of each individual variables on bank profitability. Outcome is presented in Table 4

Table 4: Coefficients of Regression

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	6.497	0.732		2.687	.000
Borrower's credit history information	0.852	.145	.155	8.136	.000
Credit information sharing cost	0.797	.153	.057	10.154	.000
Customer identification information	0.799	.166	.322	09.569	.000
Collateral information sharing	0.814	.145	.279	09.591	.000

Source: Researcher, 2019

As from the study, it would be established that when variables are held constant the bank's profitability is expected to be at 6.497. It would be demonstrated that a unit growth of the borrower's credit history while other factors are constantly held the bank's profitability will be recorded at 0.852. This would also apply to an increase of a unit of credit information sharing, cost, and, customer identification information, while other factors are constantly held, leads to an increase of profitability by 0.797 and 0.799 respectively. A unit increase in collateral information sharingas other factors are held constant, bank profitability would be at 0.814.

The findings pointed out that borrower's credit history information, credit information sharing cost, customer identification information and collateral information sharinghad a p value of $0.000 < 0.05$ a reflection that the chosen credit information sharing aspects significantly influenced profitability of commercial banks in Nakuru County, Kenya. This is supported by Munee (2013) who noted that credit information sharing positively improved bank profitability.

Similar studies were done by Munee (2013) who established that credit information sharing and bank's performance in financials perspective are positively related. Muthoni (2014) also established that credit information sharing significantly reduces the default rated and cost of credit and hence enhancing the profitability of banking institutions. Ng'ang'a (2015) established "a negative relation between credit information sharing and financial performance thus demonstrating the fact that credit information betters management of risk exposure."

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion and Recommendations

5.2 Conclusions

The research conclusion was that that credit information sharing positively and significantly influenced profitability of commercial banks. It was concluded that borrower's credit history information, credit information sharing cost, customer identification information and collateral information sharing to a significant extent influenced profitability of commercial banks. The credit information sharing enhanced banks' ability to get data on loan security, guarantors and other forms of collateral to reduce credit default. It was concluded that CIS enabled banks to identify, regulate and avoid clients with poor credit history.

5.3 Recommendations

From the study's findings, it is recommended that commercial banks have their own client credit history records to supplement those by the CRBs. The banks need all to be enrolled with all the registered CRBs in Kenya to enable access to sufficient client information before extending credit. The study further recommends that banks need to invest more on customer database for easy identification of customers, their collateral and credit history information.

REFERENCES

[1] Auronen, L. (2003). "*Asymmetric Information: Theory and Applications*". Paper presented in the Seminar of Strategy and International Business as Helsinki University of Technology, May 21, 2003.

[2] Luoto, J., McIntosh, C., & Wydick, B. (2007). Credit information systems in less developed countries: A test with microfinance in Guatemala. *Economic Development and Cultural Change*, 55(2), 313–334

[3] Koros, T. (2015) *The effect of credit information sharing on the credit market performance of commercial banks in Kenya.*MBA Thesis. University of Nairobi

[4] Mugenda, O. & Mugenda, A. (2003). *Research Methods Quantitave and Qualitative Approaches*, African Center for Technology Studies, Nairobi, Kenya

[5] Mutie, C.M. (2006). *Credit Scoring Practices and Non-performing Loan in the Kenyan Commercial Banks* MBA Thesis. University of Nairobi Kenya

[6] Ng'ang'a, M. K. (2015).*The Effect of Credit Reference Bureaus Information Sharing on Non-Performing Loans in Commercial Banks*. MBA Thesis University of Nairobi

[7] Padilla, A.J., & Pagano, M. (1997).*Endogenous Communication among Lenders and Entrepreneurial Incentives.* The Review of Financial studies, 19917: 205-236

[8] Pagano, M. & Jappelli, T. (1993).Information Sharing in Credit Markets, *the Journal of Finance,* 43 (5), 1693-1718.